REMARKS

This submission is in response to the Official Action dated April 12, 2002. Claims 3, 4, 5, and 7 have been amended for clarity. Claims 1, 2 have been canceled, without prejudice and their contents retained in claim 3. Reconsideration of the above identified application, in view of the above amendments and the following remarks, is requested.

In The Specification

Applicants respond to the Examiner's concerns by requesting the Examiner's direction be drawn to the clarifying amendments to the specification and the comments provided below. Applicants propose that these amendments fully respond to the Examiner's concerns noted in the Office Action and are solely editorial in nature. No new matter has been added.

In the Drawings

Applicants respond to the Examiner's concerns under 37 CFR §1.83(a) as follows:

Regarding the requirement to show angles theta θ (and its variants) described in claim 3, reference to these items have been removed from the claims for editorial clarity only. Reference in claim 3 and 8 to "a first angle" remain for simplicity. The "first angle" is supported on page 14, lines 18-21 and is shown as angle theta' (θ′) in Figs. 3(C) and 3(D). These positions were fully enabled in the Specification on page 15, lines

1-5 and elsewhere. Applicants may be their own lexicographer, unless the phrase chosen are offensive to the normal use of the language. Here, the inner angle theta' was clearly identified as the angle between first link 15 and second link 17 (page 14 line18-19) and was identified in claim 8 as a "first angle" between a first and a second link without objection.

Regarding the first and second sides of slide 4, these are positional items and are clearly shown in Fig. 2 on opposite sides of slide 4. Regarding the first and second slide side gib, these are slide side gibs 4a, shown in Fig. 2 and described on page 11 lines 20-end. Regarding first, second and third mating surfaces, these are enabled and shown as being on each respective first and second slide side gibs 4a. These mating surfaces match respective front, side and rear liners 3a,3b, and 3c, as shown in Fig. 2 and described on page 11 lines 20-end.

Regarding the "first centerline" see Fig. 2, identifying the previously shown centerline. Regarding the "second centerline" see Fig. 2, identifying the previously shown centerline. Regarding the "gear section", please note gears 12a, in Figs. 3(A) and 3(B), and supported on page 12, line 21 and elsewhere. No new matter has been added.

Response to §112 Concerns:

Applicants direct the Examiner's attention to the clarifying, and non-limiting amendments and the comments noted above. Applicants seasonably traverse this rejection and further note as follows:

Removal of any theta θ-angle from the claim removes the need for

enablement or disclosure other than the clear understanding provided on page 14, lines 10-end taken in view of Fig. 3(B) and others. The angle referred to in the claims is the angle defined between the first link 15 and second link 17. During operation the position of each link varies through the complete circuit and is now clearly shown at a maximum and minimum in Figs. 3(C) and 3(D) and described in the specification. This understanding was previously enabled on page 15 lines 1-5.

Reference to the mating surfaces and their position is above. Reference to the first and second centerline is above. Reference to first and second member in claim 7 has been clarified as first and second guide members and refers to guides 3 on each side of slide 4. The gear section 12a was disclosed on drive shaft 12, see Fig. 3(A). The first and second sides of slide 4 are on either side of press center P, as shown in Fig. (2), and the mating surfaces, noted above, match respective liners shown in Fig. (2). It is noted that first and second sides must be on the 'slide 4' and understanding them as being plate members 21 is contrary to the language of the specification and the claims.

Reference to 'first, second, and third mating surface' has been clarified in the specification as shown and their inter-relationship with respective front, side, and rear liners 3a, 3b, and 3c. The particular surfaces are shown in Fig. 2. Applicants propose that the amendments to the specification have clarified any possible confusion in this matter and request the Examiner's reconsideration.

Absent proof of offensive use of language, Applicants, may be their own lexicographers, and the language used in the specification and that selected in the claims for editorial reasons need not match as long as the invention is clearly understood from the

full disclosure taken as a whole after a full review. Applicants propose that such clear understanding exists when the full disclosure is read by one skilled in the art.

The amendments to claim 3 are made for purposes of simplification and clarification solely, are not limiting, and are in response to any concerns regarding the angles referenced during operation, no limitations have been made.

Response to §102 Concerns:

Independent claims 1 (now claim 3) and 5 stand initially rejected over the Imanishi reference alone. The Examiner has rejected claims 1, 5, 6, and 7 as anticipated by Imanishi (US5,218,901) The Examiner summarizes the disclosure in Imanishi and purports that Imanishi includes a continuous frame, symmetrical about a press center and that guide members are symmetrical about a centerline. Applicants seasonably traverse this rejection. To overcome a reference under §102 it is only necessary to indicate one element which is not fairly taught or disclosed in the applied reference or one claimed restrictive positional element for an element which is similarly not taught or disclosed. It should also be noted that the meaning of the language in the claims is taken from the disclosure, and unless offensive to normal usage, this meaning must be employed during comparison to applied art.

As background, in addition to having a continuous frame structure (not enabled in the multi-part frame of Imanishi) and increased operational life, one of the particular benefits of the present invention is a light and compact frame structure having only two guide members 3 (one on each plate member 21. (Page 5, lines 1-10, page 12

lines 1-11 of the disclosure). To eliminate the damaging rotation provided by the offset press center of Imanishi Fig. 5, the present design provides two guide members 3 in alignment with press center P.

In the disclosure (on page 11, lines 12-19 and Fig. 2) press center P is defined as being the center of force applied by press 1. As claimed, the present invention requires that a common centerline pass through both the press center and each of the two guide member 3. Imanishi fails to meet this requirement. Imanishi also requires a minimum four (4) guide posts 15 (col 3 line 35), none of which are in a position to receive a line passing through both a press center and an aligned opposite side guide members. As a result, Imanishi cannot operate with solely a pair of guide posts 15 to eliminate rotation during force application. The Examiner's attention is respectfully directed to Figs 1 and 2 of Imanishi, where the reference requires, mandates, and solely discloses the use of four guide posts 15 which serve to counter press-force rotation (the press-force center being in the center of the rectangle formed by the guide posts) and which cannot be eliminated by use of only two guide posts.

Response to §103 Concerns:

Claims 2 (now claim 3) and claim 8 stand rejected under §103 in view of Imanishi and Itakura. The Examiner has rejected claims 2 (now claim 3) and claim 8 as obvious over Imanishi in view of Itakura (US 6,013,322). The Examiner notes that Imanishi does not disclose a main gear, an eccentric position relative to a crankshaft nor a first link perpendicular to the crank shaft. The Examiner notes that Itakura does disclose a main

gear (drive gear 14) has an eccentric position about crank shaft 12A (specifically crank shaft 12 and eccentric section 12A) The Examiner additionally comments regarding the elements of both Imanishi and Itakura, and suggests their combination is both obvious and would result in the enable disclosure of the present invention.

Applicants seasonably traverse this rejection. To overcome a reference under §103 it is only necessary to indicate one element or positional limitation which is not fairly taught or disclosed in the applied combined reference or show that no motivation to combine exists within the references absent an affidavit of proof from the Examiner. It should also be noted that the meaning of the language in the claims is taken from the entire disclosure, and unless otherwise offensive to normal usage, must be employed during comparison to applied art.

Applicants respectfully note that the design of Imanishi prevents clear application against the present design since Imanishi requires four guide posts 15 to counter press-force. Should two of the guide posts be removed Imanishi would fail under pressure during operation. Imanishi teaches against the simplified design of the present invention. Imanishi further fails to provide any teaching, suggestion, or even discussion of force application or force magnification, via rotational speed, through crank shaft, main gear, and link(s) positioning, as is presently disclosed and claimed. Imanishi, in sum, fails to provide cite-able motivation for combination with Itakura, or any other reference, and the Examiner has not provided any other cite-able motivation than indicating that Imanshi provides a 'simple and accurate drive advantage within the assembly.' This motivation does not originate from the text of either reference (no source is cited and none is found)

and each reference indicates that the drive advantages disclosed in each is suited to the particular invention disclosed, without discussion of broadened adaption. Applicants suggest that no motivation to change, absent seductive but impermissible hindsight exists. The Examiner is kindly directed to the affidavit practice required to submit offer's of proof based upon non-text-based obviousness or personal knowledge of obviousness.

The Examiner's attention is also respectfully directed to Fig. 3(A) and 3(B), where first link 15 connects crank shaft 13 to a second link 17. Second link 17 connects to main gear 14. Main gear 14 and crank shaft 13 rotate around eccentric axises on a common centerline. Main gear 14 and drive shaft 13 rotate and must be linked through links 15, 17 through out the entire rotation. This assembly, the elements, and their arrangement is neither described nor enabled in either Imanishi or Itakura.

The Examiner has indicated that Itakura's eccentric section 12a of crank shaft 12 (identified by the Examiner as crank shaft 12) joins to connecting rod 11 (Examiner's defined first link) contrary to the present disclosure's mandate to connect first link 15 with crank shaft 13. Through Itakura's analysis, Itakura's connecting rod 11(Examiner's first link) must connect to a main gear via a second link (neither a main gear or a second link shown or disclosed). Itakura fails to disclose a second link other than upper arm 8A which fails to engage a main gear being rotatable in a manner enabled by the present claim and disclosure . Itakura shows that connecting rod 11(Examiner's first link) does not and cannot operate in manner similar to the present disclosure (i.e. it reciprocates and does not rotate) and if somehow forcefully adapted to Imanishi would cause Imanishi to fail absent substantial and impermissible redesign to incorporate all the linkages required.

Thus, the references alone or combined, fail to provide written motivation combine, do not operate in a manner as suggested, and if forcefully integrated (in some unexplainable manner) would fail to operate without substantial redesign. The references further fail to disclose the elements of a second link 17 rotatably coupling a main gear 14 to first link 15. Both references further fail to show a rotation axis (through an entire rotation) of main gear 14 and a rotation axis of crank shaft 13 being eccentric along a common centerline.

Conclusion

Therefore, in view of the above amendments and remarks, it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue. Applicants propose that they have responded to each concern raised by the Examiner.

If there are any other issues remaining which the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

Respectfully submitted,

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L. DiLullo A. DiLullo

Name (Print) Signature

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PATENT TRADEMARK OFFICE

Docket No: 9637/0L307

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: **KOBAYASHI** et al.

Serial No.: 09/888,073 Art Unit: 3725

Confirmation No.: 6606

Filed: June 22, 2001 Examiner: SELF, Shelley M.

For: **PRESS MACHINE**

MARKED-UP VERSION UNDER 37 C.F.R. 1.121

Hon. Commissioner of
Patents and Trademarks
Washington, DC 20231

June 18, 2002

Sir:

In response to the Official Action dated April 12, 2002, please amend the above-identified application as follows:

IN THE DRAWINGS:

Kindly see the Drawing Change Authorization Request filed concurrently herewith under 37 C.F.R. 1.121.

IN THE SPECIFICATION:

Please amend the specification pursuant to 37 C.F.R. 1.121 as follows:

On Page 3, lines 1-5, please amend as follows:

During operation, a drive force of motor 105 causes flywheel 111 to rotate. Drive shaft 112 rotates when the clutch in the clutch/break mechanism (not shown), mounted in flywheel 111, connects. Drive shaft 112 rotates main gear 114. Main gear 114 rotates [cranks haft] crank shaft 113. Connecting rod 106 on eccentric portion 113a causes slide 104 to operate.

On Page 10, lines 1-10, please amend as follows:

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1(A) is a front-view of a press according to the present invention.

Fig. 1(B) is a side-view of a press according to the present invention.

Fig. 2 is a partial cross-section drawing along line II-II in Fig. 1(A).

Fig. 3(A) is a detailed side-view of a drive mechanism according to the present invention.

Fig. 3(B) is a cross-section drawing along the III-III line in Fig. 3(A).

Fig. 3(C) is a cross-sectional drawing along the III-III line at a bottom dead center position.

Fig. 3(D) is a is a cross-sectional drawing along the III-III line at a top dead center position.

Fig. 4(A) is a front-view of a conventional press.

Fig. 4(B) is a side-view of a conventional press.

Fig. 5 is a partial cross-section drawing along the I-I line in Fig. 4 (A).

On Page 10, line 20 to page 11, line 2, please amend as follows:

A guide 3 is integrally formed in frame 2. Guide 3 supports each side of slide 4. Guide 3 allows slide 4 to operate in a guided up-and-down manner. A bolster 8 is below slide 4. A bed 22 supports bolster 8 below slide 4. A die 7 is between slider 4 and bolster 8, and plate members [102] 21, 21. In operation, a connecting rod 6 drives die 7 and slide 4, as will be explained.

On Page 11, lines 20-end, please amend as follows:

A slide-side gib 4a is on each side of slide 4 opposite press center P. Slide-side gibs 4a are supported on three sides (three mating surfaces (first, second, and third mating surfaces) as shown) by respective front liners 3a, side liners 3b, and rear liners 3c attached in respective guides 3. Front liners 3a, side liners 3b, and rear liners 3c accurately guide slide 4 along guide 3 during operation and maintain alignment with press center P and frame 2. Front liners 3a, side liners 3b, and rear liners 3c are symmetrically disposed, to the respective front, side, and rear of press center P.

On Page 12, lines 1-11, please amend as follows:

Cross sections 2a, 2b, 2c, and 2d of frame 2 are symmetrical to press center P. Cross sections 2a, 2b, 2c, and 2d are symmetrical to a first center line (vertical centerline of press 1) and symmetrical to a second center line (horizontal centerline of press 1), both shown on Fig. 2. During operation, press 1 may expand or contract due to operational and environmental pressures. Since cross sections 2a, 2b, 2c, and 2d are symmetrical to press center P any expansion during operation forced to be uniform along a front-back axis and left-right axis to press center P. It is to be understood, that controlling the effects of expansion, minimizes the possibility of operational errors and press 1 failure. It is to be understood that the effects of operational expansion are beneficially managed through a

combination of frame integral construction, frame symmetry, alignment of press center P, slide 4 (with slide-side gibes 4a), and guide 3 in press 1 and other construction details indicated above and below.

On Page 13, line 20 to line 25, please amend as follows:

It should be understood that because the rotation axis of main gear 14 is eccentric to the rotation axis of crank shaft 13, in operation, slide 4 operates at a slow speed near the bottom dead center position, and at a higher speed in other positions. Thus, since the rotation axes of main gear 14 and crank shaft 13 are eccentric, through the operation of first link 15 and second link [16] 17, this results in the different operation speeds of slide 4 through an operational cycle.

On page 14, kindly amend lines 11-15, as follows:

A center line exits (as shown) between the rotation center of crank shaft 13, main gear 14 [and] of press 1. The difference between the center of crank shaft 13 and main gear 14 is a distance along the center line.

A rotation angle theta (θ) is formed (not shown) by main gear 14 during rotation relative to the [a] center line.

On page 14, kindly amend lines 18-21, as follows:

Additionally referring now to Figs. 3(C) and 3(D), [A]an inner angle theta′ (θ′) (a first angle) is defined [(not shown)] between first link 15 and second link 17. Inner angle theta′ (θ′), changes through the rotation of main gear 14 between an opening position at the bottom dead center position and a closing position at the top dead center position, as shown.

IN THE CLAIMS:

Please amend the claims pursuant to 37 C.F.R. 1.121 as follows:

Please cancel claims 1 and 2 without prejudice.

Please amend claims 3, 4, 6, and 7 as shown:

3. (Amended) A press machine, [according to claim 2, further] comprising:

drive means for operating a slide in a cycle;

a press center on said slide;

a first and a second guide member on said press machine;

a line between said first and said second guide members passing through said press center;

said slide receiving a driving force from said drive means, and alignment said first

and said second guide members with said press center eliminating rotational forces upon said slide and guiding said slide in said cycle along a common centerline, thereby increasing press machine precision, operational life, and rigidity;

a frame supporting said drive means and said slide;

said frame having a continuous shape symmetrical about said press center;

a crank shaft and a main gear in said drive means;

said main gearhaving a position eccentric about said crank shaft;

a first link extending perpendicular from said crank shaft;

a second link rotatably couples said first link to said main gear and increases and transmits said drive force from said main gear to said crank shaft whereby said slide operates in said cycle;

a top and a bottom dead center position on said slide;

said main gear rotatably disposed on said frame

a gear section of said drive shaft operably joined to said main gear14;

said crank shaft rotatably disposed on said frame;

an eccentric section on said crank shaft;

a connecting rod operably coupling said crank shaft to said slide;

a first angle operably defined between said first and second link whereby said first angle is at a maximum at said bottom dead center position and at a minimum at said top

dead center position; and

a rotation axis of said main gear and a rotation axis of said crank shaft are eccentric along a common center line, whereby a speed of said slide is at a minimum at said bottom dead center and a maximum at said top dead center position thereby increasing a pressing force at said bottom dead center position.

[said main gear having a rotation angle (θ);

said crank shaft having a rotation angle (θ′′);

an inner angle (θ′) defined between said first and said second link;

said inner angle (θ′) at a maximum when said slide is at said bottom dead center;

said inner angle (θ′) at a minimum when said slide is at said top dead center; and

said rotation angle (θ) being distributed between said inner angle (θ′) and said rotation angle (θ′′) and said drive means distributes a slide speed during said cycle and slows said slide in the vicinity of said bottom dead center position while speeding said slide in a quick return and increases a pressing force at said bottom dead center position.]

4. (Amended) A press machine, according to claim 3, further comprising:

at least a first and a second side [member] o[f]n said slide;

said first and second side [members] operable between each respective said first and second guide members;

at least a first and a second slide side gib;

each said first and second slide side gib on [each] respective said first and said second side [member] of said slide;

at least a first, a second, and a third mating surface on each respective said first and said second slide side gibs;

at least a front, a side, and a rear liner on each respective said first and second guide members; and

each said front, side, and rear liners in guiding contact with each respective said first, second, and third mating surfaces whereby said slide operates vertically along said common centerline and said press center and prevents said rotational force.

5. (Amended) A press machine, comprising:

a frame;

a flywheel;

a drive mechanism;

a slide in said frame;

said slide operating along a first centerline of said frame;

a press center on said slide;

said press center aligned with said first centerline and said frame;

a first and a second guide member on said press machine;

a line between said first and said second guide member passing through said press center;

said drive mechanism operating said slide along said press center;

said slide and said frame symmetrical about said press center and said first centerline; and

said frame being continuous and symmetrical about said first centerline whereby said frame resists a rotational force during a pressing operation and eliminates an operational gapping risk.

6. (Amended) A press machine, according to claim 5, further comprising:

a first and a second side member [in said frame] on said press machine;

said first and second side members disposed symmetrical about [opposite] a second centerline of said frame;

a crown member in said frame joining said first and second side members;

a drive mechanism holding section in said frame;

said crown member and a drive mechanism holding section supporting said drive mechanism;

a bed member; and

said bed member connecting said first and second side members below said slide whereby said first and said second side member rigidly joined and said frame is increased in strength and rigidity thereby minimizing an operational gapping and increasing a pressing precision.

7. (Amended) A press machine, according to claim 6, further comprising:

[at least a first and a second guide members in said frame;]

each said first and second guide member[s] disposed symmetrical about said press center and said first centerline;

each said first and said second guide members supporting said slide;

at least a first liner member in each said first and second guide members;

[at least] a first and a second slide side gib [i]on said slide;

each said first and second slide side gib in guiding contact with each said first liner on each respective said first and second guide members; and

said first and second guide members and each said first liner engaging said slide and allowing said slide to operate in said press machine, whereby operational gapping is prevented and said pressing precision is improved.

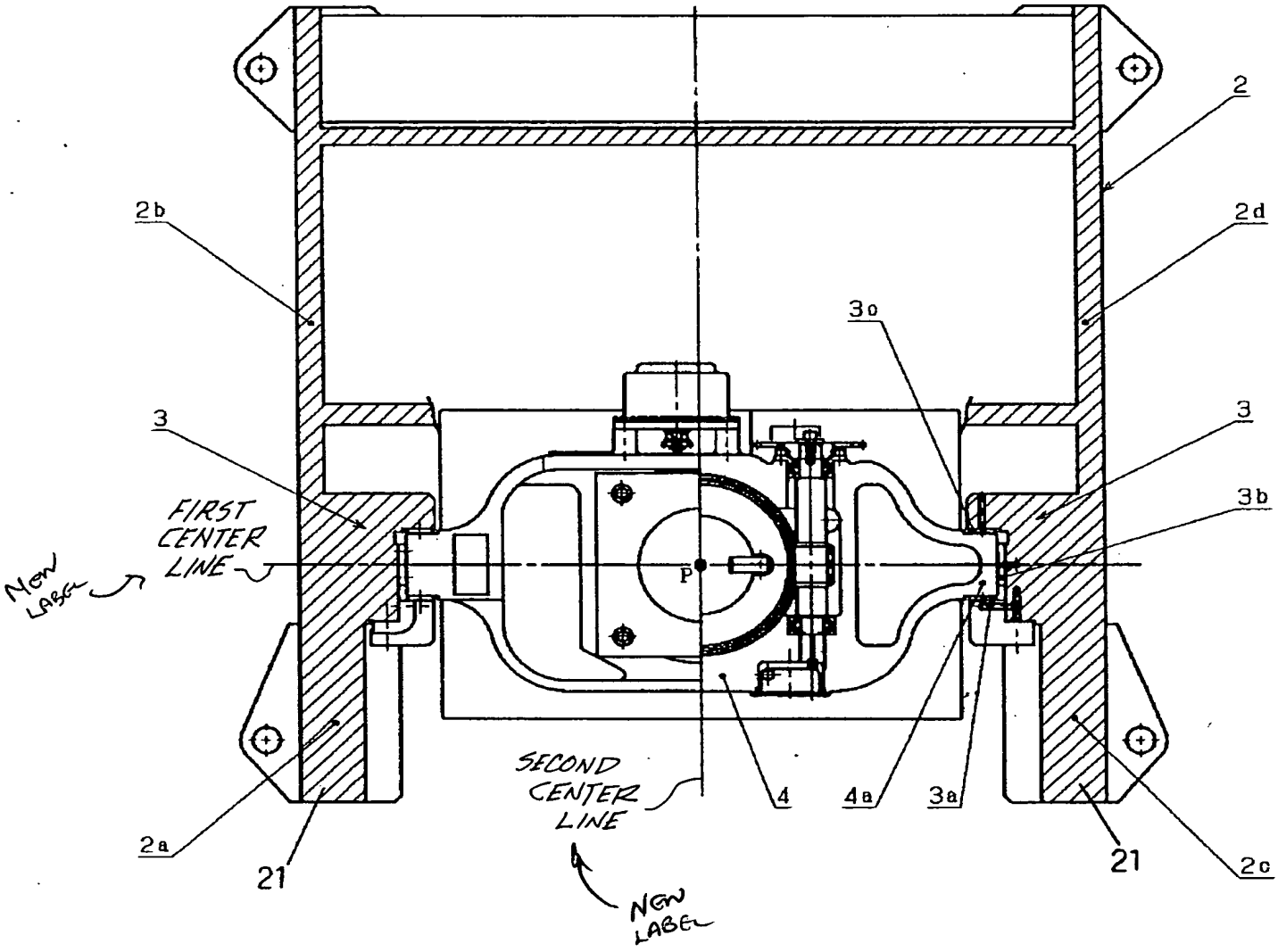
2
2b
2d
3c
3
3
3b
FIRST CENTER LINE
NEW LABEL
P
SECOND CENTER LINE
4
4a
3a
2a
21
21
2c
NEW LABEL

Fig. 2

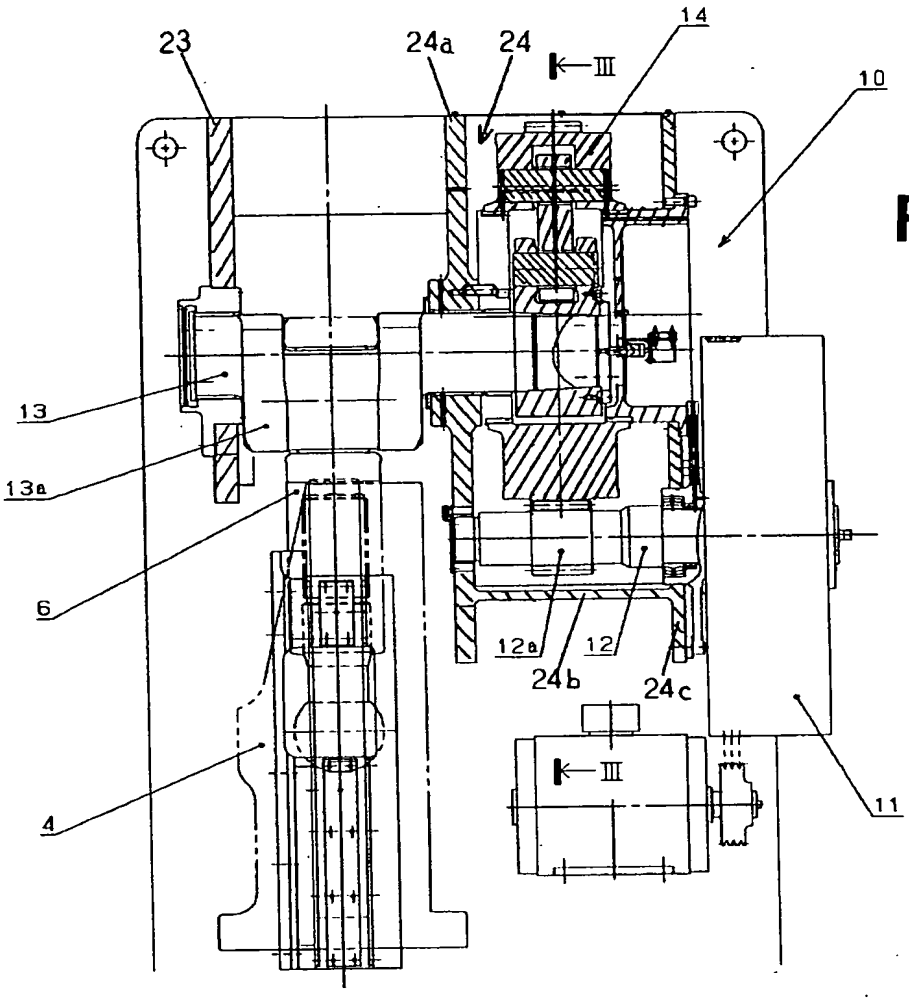
23
24a
24
III
14
10
13
13a
6
12a
12
24b
24c
III
4
11

Fig. 3(A)

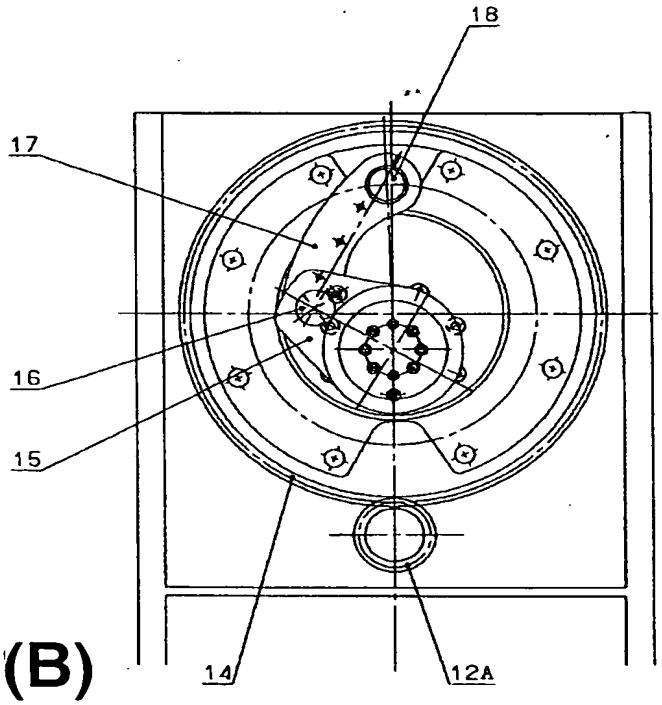
18
17
16
15
14
12A

Fig. 3(B)

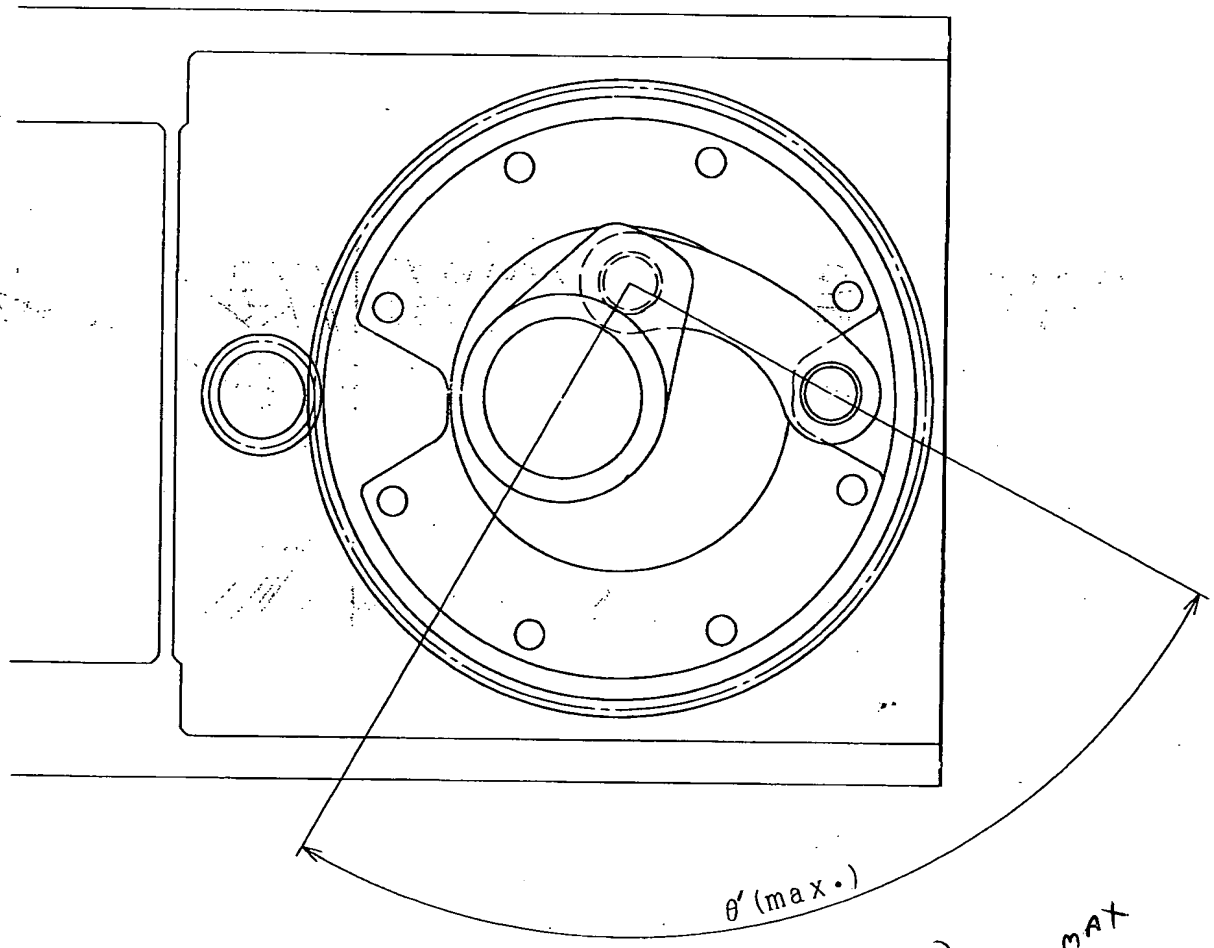

Fig. 3(C)

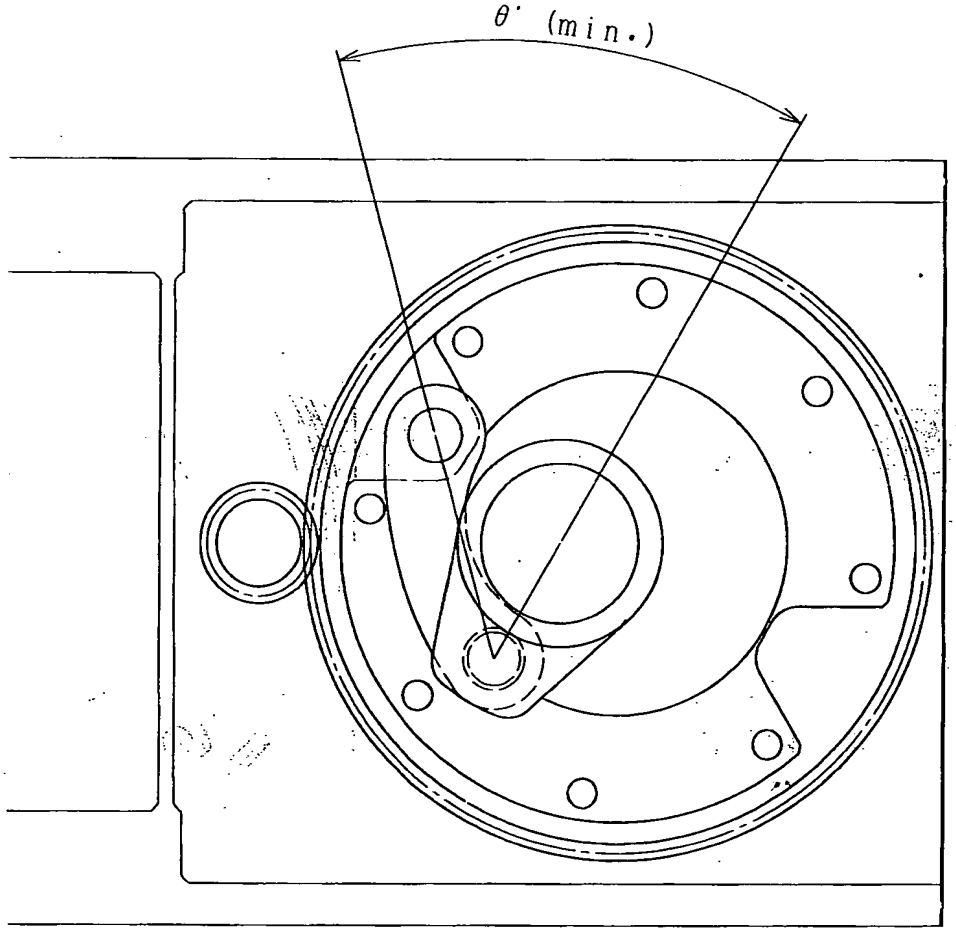

FIG 3(D) SHOWS ANGLE MIN

Fig. 3(D)

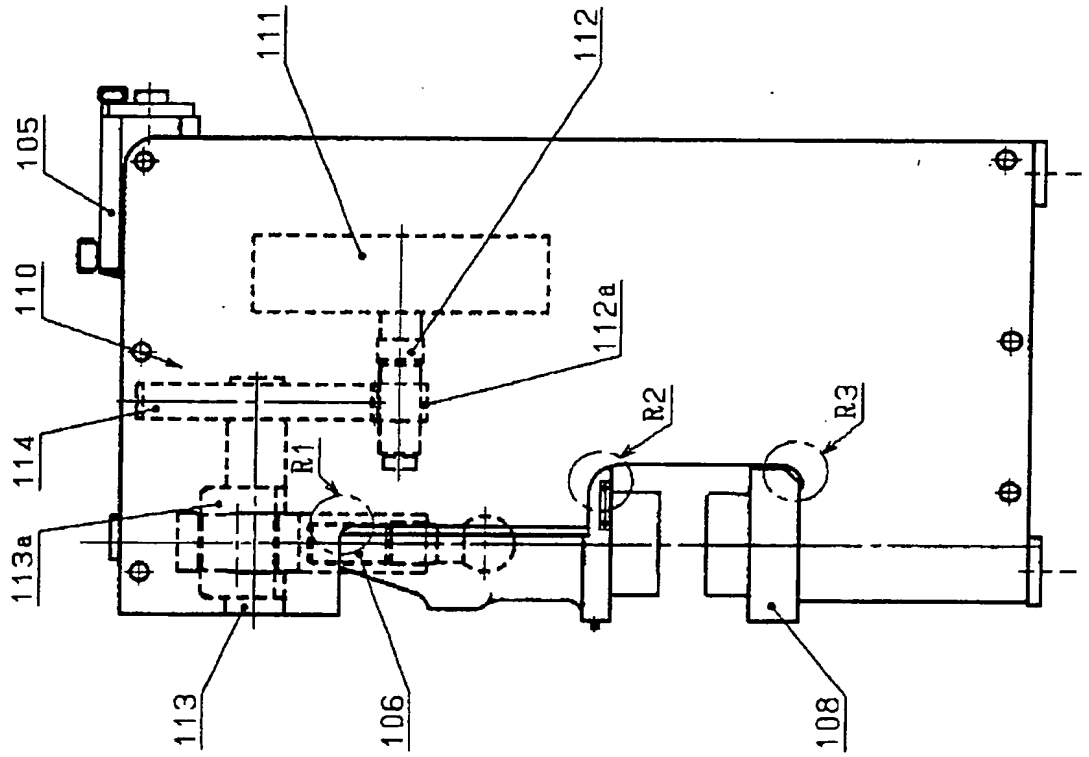

Fig. 4(B)
(Prior Art)

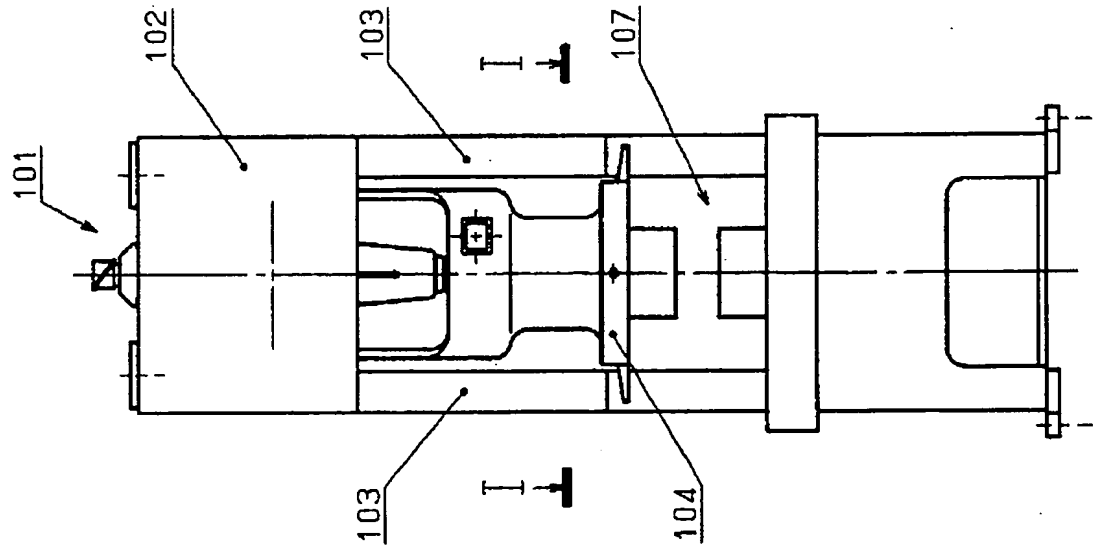

Fig. 4(A)
(Prior Art)

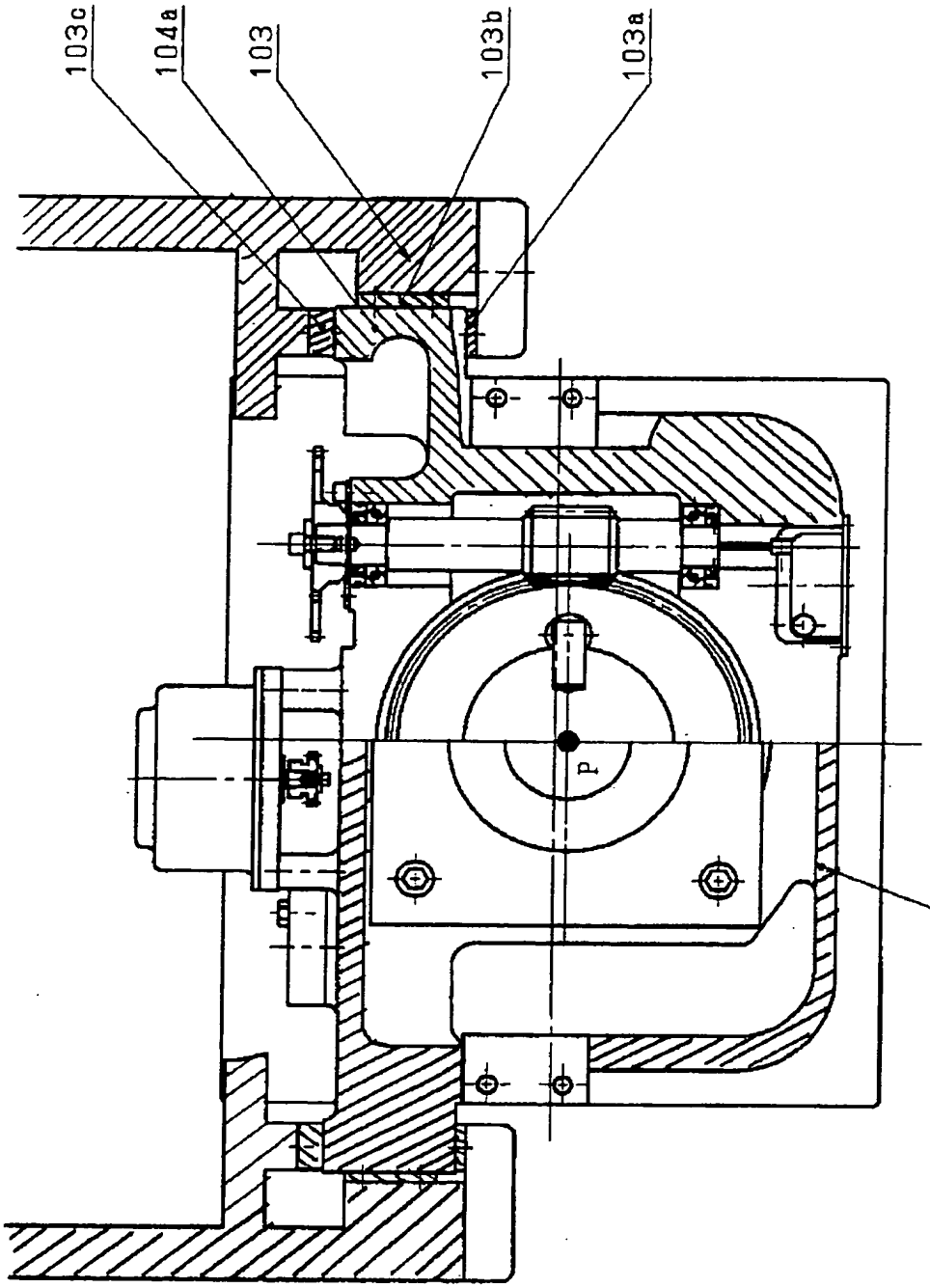

Fig. 5
(Prior Art)